

INTRODUCTION:

This study compared the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme portfolio of research with the united Kingdom (UK) burden of disease, as measured by Disability-Adjusted Life Years (DALYs).

METHODS:

Design: Cross-sectional study.

Setting: The HTA Programme cohort included all funded applications (n = 363) received by the HTA Programme during the period 1 April 2011 to 31 March 2016. The sample contained primary research and evidence syntheses, all purely methodological studies were excluded since these are not comparable to the other study types.

Main Outcome Measure: Proportion of spend for each of the twenty-one Health Research Classification System (HRCS) health categories were compared with burden of disease in the UK calculated using 2015 DALY data from the Institute for Health Metrics and Evaluation (IHME) Global Health Data Exchange (GHDx).

RESULTS:

The funded HTA Programme projects totalled about GBP397million research spend, which broadly reflected the UK DALY burden. Overall, there was less than 5 percent difference between the actual and predicted programme spend based on the burden of disease in the UK in most instances (seventeen out of the twenty-one HRCS Health Categories).

The largest categories of apportioned spend were Cancer (accounting for 12.1 percent of portfolio), and Mental Health (11.8 percent of portfolio) which particularly reflected the 9.8 percent burden of disease to the UK. Most notable deviations from DALY, where spend was lower than disease burden, were in the Cancer, Cardiovascular and Musculoskeletal categories; which may reflect the importance of other, notably charity, funding.

CONCLUSIONS:

The HTA Programme spend broadly aligns with burden of disease as measured using DALYs. Discrepancies were

expected owing to the programme remit and its approach to commissioning research to address market failure particularly in areas that are not already well supported by research charities or industry. Regular review of DALY data during research prioritisation and commissioning allows the HTA Programme to identify and address shortfalls in disease areas and to balance its portfolio.

OP11 Structural Uncertainty In Economic Modelling For Smoking Cessation

AUTHORS:

Becky Pennington (rebekah.pennington@nice.org.uk), Alex Filby, Matthew Taylor, Lesley Owen

INTRODUCTION:

Guidance for developing economic models recommend that model structure is carefully considered, and assumptions varied in sensitivity analysis (1). Models in smoking cessation have typically used cohort-level approaches, although recently discrete event simulations (DEs) have been developed (2). DEs allow additional flexibility such as modelling changing risk over time, and recurrent events. Our aim was to explore the impact of varying model structure and assumptions on the cost-effectiveness of smoking cessation programs.

METHODS:

We built a cohort state-transition model which related mortality to smoking status and considered the prevalence (based on smoking status) of five comorbidities associated with smoking, each of which has an associated cost and quality of life decrement. We additionally built a patient-level DES, using the Discretely Integrated Condition Event framework (3). The DES used the same data as the cohort model, except considering incidence for comorbidities rather than prevalence. We considered a population of

smokers aged 16 years old and an intervention costing GBP827 on which 27 percent of people quit, compared with no treatment. We produced results using the two models for comparable scenarios, and ran additional scenarios considering different assumptions.

RESULTS:

In the cohort model, the incremental cost-effectiveness ratio (ICER) for intervention versus no treatment was GBP4,000/quality-adjusted life year (QALY). In the DES, modelling mortality linked to smoker status produced an ICER of GBP1,000/QALY and modelling mortality linked to comorbidities produced an ICER of GBP6,000/QALY. In the DES with mortality linked to comorbidities, varying the relative risk of comorbidities with time since quitting gave an ICER of GBP3,000/QALY. Including relapse increased the ICER to GBP21,000/QALY.

CONCLUSIONS:

The ICER for the smoking cessation program changes when model assumptions are varied, although the choice of DES versus cohort model appears to make a relatively small difference. Inclusion of relapse substantially changes the ICER, demonstrating the importance of long-term effects in economic models.

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OP15 The Incremental Cost Of Delirium Following Aortic Valve Replacement

AUTHORS:

Seth Clancy, Brian Potter (brianjpotter@gmail.com), Phil Green

INTRODUCTION:

Postoperative delirium has been associated with poorer long term survival in Transcatheter aortic valve replacement (TAVR) and Surgical aortic valve replacement (SAVR) patients. However, its effect on hospitalization costs and length of stay in these populations has not been formally assessed.

METHODS:

Using the Medicare Provider Analysis and Review File, we retrospectively analyzed elderly (80 years of age and older) Medicare patients receiving TAVR and SAVR in the United States during the 2015 fiscal year. ICD-9-CM codes were used to identify postoperative delirium diagnoses. The incremental hospital resource consumption, measured as hospital cost and length of stay, was estimated for patients with postoperative delirium during their TAVR or SAVR index hospitalization. Multivariate regression models were used for the adjusted cost estimates controlling for patient demographics, comorbidities, and complications.

RESULTS:

A total of 21,088 claims were available for analysis (12,114 TAVR and 8,974 SAVR). The mean age of the TAVR group was older compared to the SAVR group (87 versus 84; $p < .001$) and TAVR patients presented with a higher comorbidity burden (Charlson Index score 3.0 versus 2.1; $p < .0001$). TAVR patients experiencing postoperative delirium during the index hospitalization was 1.6 percent compared to 3.6 percent of surgical patients ($p < .0001$). For the overall cohort, the regression adjusted incremental cost of postoperative delirium was (USD15,592; $p < .0001$). Patients experiencing delirium also had significantly longer